**Homework 5 - Computer Science 461** **Name:** _____

*Due Monday, Feb 17.*

1. Let $L = \{w \in \Sigma^* : \text{ the length of } w \text{ is a power of } 2\}$. Use the pumping lemma to prove that $L$ is not a regular language.

2. Let $L = \{uwu : u, w \in \{0,1\}^*, u \neq \epsilon\}$. Prove that $L$ is not a regular language.